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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10:016,309	11/02/2001	Mohamed A. Megahed	01CON279P	4718
25700	7590	01:15:2004	EXAMINER	
FARJAMI & FARJAMI LLP 16148 SAND CANYON IRVINE, CA 92618			CHAMBLISS, ALONZO	
			ART UNIT	PAPER NUMBER
			2827	
DATE MAILED: 01/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,309

Applicant(s)

MEGAHED ET AL.

Examiner

Alonzo Chambliss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/03 has been entered.

Response to Arguments

2. Applicant's arguments filed 12/15/03 have been fully considered but they are not persuasive.

Applicant alleges that Merrill fails to teach, disclose, or suggest forming a stud bump on a bonding pad and stitch bonding one end of a bonding wire to the stud bump on the bonding pad. This argument is deemed unpersuasive since Merrill teaches bonding pads that may be readily modified depending upon the specific type of bond or bonds applied as stated in col. 4 lines 42-46 and col. 7 lines 33-42. Merrill teaches wherein a second end of the bonding wire 173a is stitch bonded to the stud bump 175 (see Fig. 6). The stud bump 175 is situated on the second semiconductor die bond pad 172b, wherein the bonding wire 173b provides the connection between the stud bump and the third semiconductor die bond pad 172c (see Fig. 5).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-8, 10-16, and 18-20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Merrill et al. (U.S. 5,886,393).

With respect to Claims 1, 2, 8, 10, 11, and 15, Merrill teaches a semiconductor die 28 having a source bond pad 172a (i.e. first semiconductor bond pad) and a destination bond pad 172b (i.e. second semiconductor bond pad) attached to a top surface of the semiconductor die 28 (see Fig. 5). It should be noted that any one of the bonding pads 172a-172d can be a source bond pad or destination bond pad. A stud bump 175 is situated on the destination bond pad 172b. A bonding wire 173a (i.e. first conductor) provides a connection between the source bond pad 172a and the stud bump 175. Merrill teaches bonding pads that may be readily modified depending upon the specific type of bond or bonds applied as stated in col. 4 lines 42-46 and col. 7 lines 33-42. Merrill teaches wherein a second end of the bonding wire 173a is stitch bonded to the stud bump 175 (see Fig. 6). The stud bump 175 is situated on the second semiconductor die bond pad 172b, wherein the bonding wire 173b provides the connection between the stud bump and the third semiconductor die bond pad 172c (see Fig. 5). Merrill discloses in Fig. 3 that a conduction path that reduces the electromagnetic field interaction between bonding wire segments and therefore,

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increases the inductance for a given bonding wire length. The inductance is at least in part a function of the enclosed by the inductor loop (see col. 5 lines 5-35). Thus, the area enclosed is measure along a first axis substantially perpendicular to the top surface of the semiconductor die. The inductance of the inductor is increase by increasing a loop height of the bonding wires 173a-173d, and wherein decreasing the loop height of the bonding wire decreases the inductance of the inductor. Thus, the loop height (i.e. measured along a first axis substantially perpendicular to the top surface of the semiconductor die) is determined and controlled by the height of the wire between terminal pads. The first end of the bonding wire 173a is bonded to the source bond pad 172a while the second end of the bonding wire 173a is bonded to the stud bump 175. A bonding wire 173b provides a connection between the second semiconductor bond pad 172b and a third semiconductor bond pad 172c. the source bond pad 172a being a first terminal of the inductor and the destination bond pad 173b being a second terminal of the inductor (see col. 6 lines 42-67; Figs. 5 and 6)

With respect to Claims 3 and 16, since the bonding terminal pads may be readily modified depending upon the specific type of bond or bonds applied as stated in col. 4 lines 42-46 and col. 33-42. Merrill teaches wherein a first end of the bonding wire 173a is ball bonded to the source bond pad 173b (see Fig. 5).

With respect to Claims 5, 6, 12, 18, and 19, Merrill teaches the source and destination pads 142a-142d are not used to establish an electrical connection between the semiconductor die 128 and a substrate (i.e. a die pad connected to lead fingers 126 of a lead frame 122 see col. 5 lines 62-67 and col. 6 lines 1-11; Fig. 4). The source and

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destination bond pads 172a, 172b and a third semiconductor die bond pad 172c are for an inductive assembly (i.e. specialized operation for the chip). The inductance is further defined by at least a second selected dimension of the bonding wire, wherein the second selected dimension is measured along a second axis substantially parallel (i.e. the distance between terminal pads) to the top surface of the semiconductor die 28 (see col. 5 lines 5-35 and col. 6 lines 42-67).

With respect to Claims 7, 14, and 20, Merrill teaches wherein an inductance of the inductor is increased by increasing a first selected dimension (i.e. loop height) of the bonding wire 173a-173d, and wherein the inductance of the inductor is decreased by decreasing the first selected dimension (i.e. loop height) of the bonding wires 173a-173d (see col. 5 lines 3-34).

With respect to Claim 13, Merrill teaches a second conductor 173c providing connection between the third semiconductor die bond pad 172c and a fourth semiconductor die bond pad 172d (see Fig. 5).

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.


Conclusion

5. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956

AC/January 10, 2004


Alonzo Chambliss
Patent Examiner
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